Volunteer Lake Assessment Program Individual Lake Reports
RESERVOIR POND, DORCHESTER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	289	Max. Depth (m):	13.7	Flushing Rate (yr¹)	0.4
Surface Area (Ac.):	111	Mean Depth (m):	3.8	P Retention Coef:	0.84
Shore Length (m):	3,700	Volume (m³):	1,728,000	Elevation (ft):	1340

TROPHIC CLASSIFICATION

| Year	Trophic class
1981	OLIGOTROPHIC
2001	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Very Good	At least 10 samples with 0 exceedances of criteria.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.
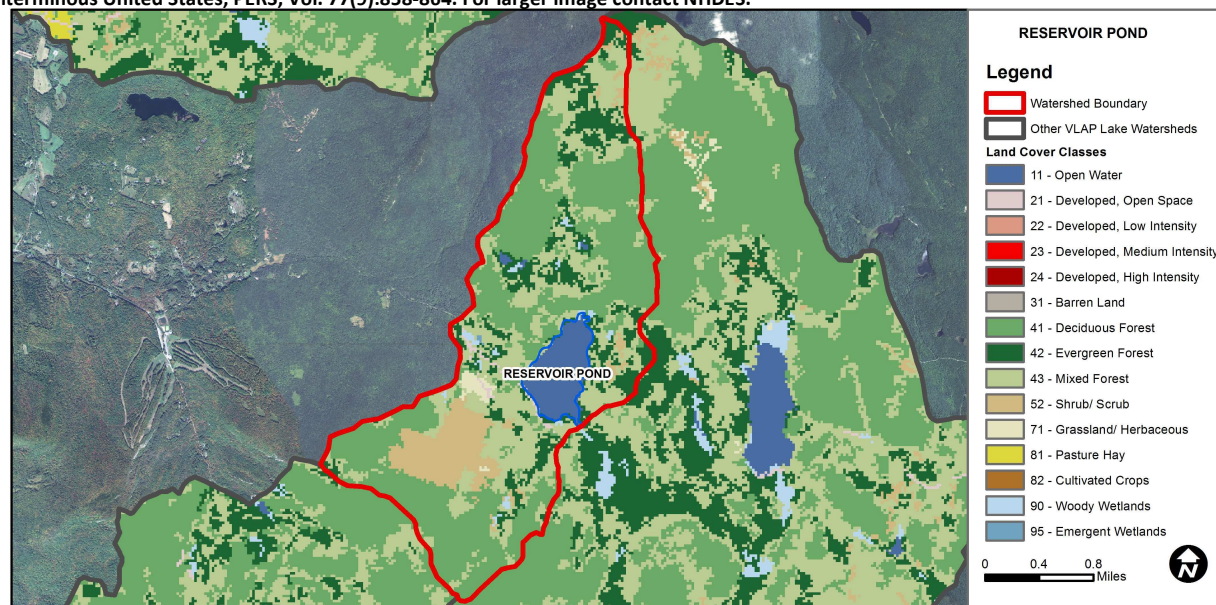
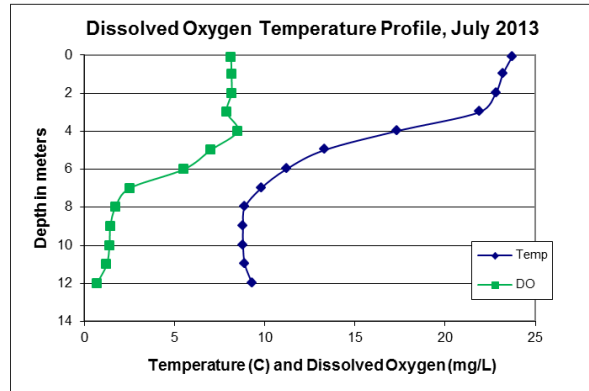| Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.66	Barren Land	0	Grassland/Herbaceous	0.75
Developed-Open Space	0.52	Deciduous Forest	42.36	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	13.48	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	28.03	Woody Wetlands	0.91
Developed-High Intensity	0	Shrub-Scrub	8.16	Emergent Wetlands	0.05

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic*)

◊ **CHLOROPHYLL-A:** Chlorophyll was relatively low and approximately equal to the state median. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.

◊ **CONDUCTIVITY/CHLORIDE:** Deep spot and tributary conductivity levels were low. Historical trend analysis indicates relatively stable epilimnetic conductivity with moderate variability between years.

◊ **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low and below the state median. Tributary phosphorus levels were slightly elevated in Cutter Brook and Mud Pd. Inlet.

◊ **TRANSPARENCY:** Transparency decreased slightly from the 2010-2012 period. Historical trend analysis indicates relatively stable transparency with high variability between years.

◊ **TURBIDITY:** Turbidity was low at all stations except Cutter Brook where it was slightly elevated and potentially contributed to the elevated phosphorus.

◊ **pH:** Metalimnetic and hypolimnetic pH levels are lower than desirable range 6.5 – 8.0 units.

◊ **DISSOLVED OXYGEN:** Dissolved oxygen levels were depleted in the hypolimnion. As the summer progresses, decomposition of organic matter on the lake bottom utilizes dissolved oxygen, and it does not get replenished until the pond turns over in the fall.

◊ **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer to reduce data variability and better assess water quality and trends.

Dissolved Oxygen Temperature Profile, July 2013

Table 1. 2013 Average Water Quality Data for RESERVOIR POND								
Station Name	Alk.	Chlor-a	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	ug/l	m		ntu	
					NVS	VS		
Cutter Brook			36.2	19			1.48	6.76
Epilimnion	3.10	4.17	16.8	5	3.30	4.15	0.63	6.62
Metalimnion			17.4	8			0.78	5.97
Hypolimnion			18.3	10			0.59	5.68
Mud Pd Inlet			13.4	15			0.66	5.63
Outlet			16.5	6			0.53	6.54
Townline Brook			26.8	12			0.52	6.67

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data highly variable.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
Conductivity	Stable	Trend not significant; data highly variable.	Transparency	Stable	Trend not significant; data highly variable.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary.

Historical Trend Epilimnetic Conductivity and pH

Historical Deep Spot Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data